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Version 1.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard

Describes features of the motherboard.

Go to ⇨ page 1

Chapter 2

Installing the Motherboard

Describes installation of motherboard components.

Go to ⇨ page 7

Chapter 3

Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ⇨ page 23

Chapter 4

Using the Motherboard Software

Describes the motherboard software.

Go to ⇨ page 45

Chapter 5

Trouble Shooting

Provides basic trouble shooting tips

Go to ⇨ page 49

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the CDC-I motherboard. This motherboard is a high performance, enhanced function motherboard with Intel® Atom D2700/D2500/D2550 or other CPU for high-end business or personal desktop markets.

This motherboard is based on Intel® NM10 Chipset for best desktop platform solution. NM10 is a single-chip, highly integrated.

The memory controller of this motherboard supports DDR3 memory SODIMM frequency of 1066. It supports two DDR3 sockets with up to maximum memory of 4 GB.

The motherboard CDC-I supports one PCI slot. It implements an EHCI compliant interface that provides eight USB 2.0 ports (four USB ports and two USB 2.0 headers support additional four USB ports). Intel® NM10 integrates a Serial ATA host controller, supporting two SATA ports with maximum transfer rate up to 3.0 Gb/s each.

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, one VGA port, one parallel port, one COM port, four USB ports, one LAN port and audio jacks for microphone, line-in and line-out.

Feature

Processor

- Intel® Atom D2700/D2500/D2550 or other CPU
- D2700 supports “Hyper-Threading” technology CPU

“Hyper-Threading” technology enables the operating system into thinking it’s hooked up to two processors, allowing two threads to be run in parallel, both on separate “logical” processors within the same physical processor.

Chipset

The Intel® NM10 chipset is based on an innovative and scalable architecture with proven reliability and performance.

- Enhanced DMA Controller, interrupt controller, and time functions
- Integrated SATA 3.0 Gb/s Host Controller
- Integrated USB 2.0 Host Controller

Memory

- Supports DDR3 1066 SO-DIMM with single-channel architecture
- Accommodates two unbuffered DIMMs
- 2 x 204-pin DDR3 SODIMM sockets support up to 4 GB

Onboard LAN (optional)

The onboard LAN provides the following features:

• Supports PCI Express™ 1.1 • Integrated 10/100 transceiver • Wake-on-LAN and remote wake-up support
• Supports PCI Express™ 1.1 • Integrated 10/100/1000 transceiver • Wake-on-LAN and remote wake-up support

Audio

This motherboard may support either of the following Audio chipsets:

- 5.1 Channel High Definition Audio Codec
- ADCs support 44.1k/48k/96kHz sample rate
- Meets Microsoft WLP 3.10 Vista premium and mobile PCs audio requirements
- Direct Sound 3D™ compatible

Expansion Options

The motherboard comes with the following expansion options:

- One 32-bit PCI slot
- Two 7-pin SATA connectors

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One parallel port
- One serial port
- One VGA port
- Four USB ports
- One LAN port
- Audio jacks for microphone, line-in and line-out

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

1.Some hardware specifications and software items are subject to change without prior notice.

2.Due to chipset limitation, we recommend that motherboard be operated in the ambiance between 0 and 50° C.

Specifications

CPU	•	Intel® Atom D2700/D2500/D2550 or other CPU
Chipset	•	Intel® NM10 Express
Memory	•	Single-channel DDR3 memory architecture
	•	2 x 204-pin DDR3 SODIMM socket support up to 4 GB
	•	Supports DDR3 1066 DDR3 SDRAM
Expansion Slot	•	1 x PCI slot
Storage	•	2 x Serial ATAII devices
Audio	•	VIA VT1705CD
LAN	•	Realtek 8105E-VL 10/100 LAN (RTL8111E-VL Gigabit Lan optional)
Rear Panel I/O	•	1 x PS/2 keyboard & PS/2 mouse connectors
	•	4 x USB ports
	•	1 x Parallel port
	•	1 x VGA port
	•	1 x COM port
	•	1 x RJ45 LAN connector
	•	1 x Audio port
Internal I/O Connectors & Headers	•	1 x 24-pin ATX Power Supply connector
	•	1 x Case open header
	•	2 x Serial ATA connectors
	•	2 x USB 2.0 headers support additional 4 USB ports
	•	1 x Front panel header
	•	1 x Clear CMOS header
	•	1 x Front panel audio header
	•	1 x Speaker header
	•	CPU FAN & SYS FAN connectors
	•	1 x LVDS header (optional)
	•	1 x COM header
System BIOS	•	AMI BIOS with 16Mb SPI ROM
	•	Supports Plug and Play, STR/STD, Hardware monitor, PCI interrupt selection, ACPI & DMI
Form Factor	•	Mini-ITX Size, 170mm x 170mm

Motherboard Components

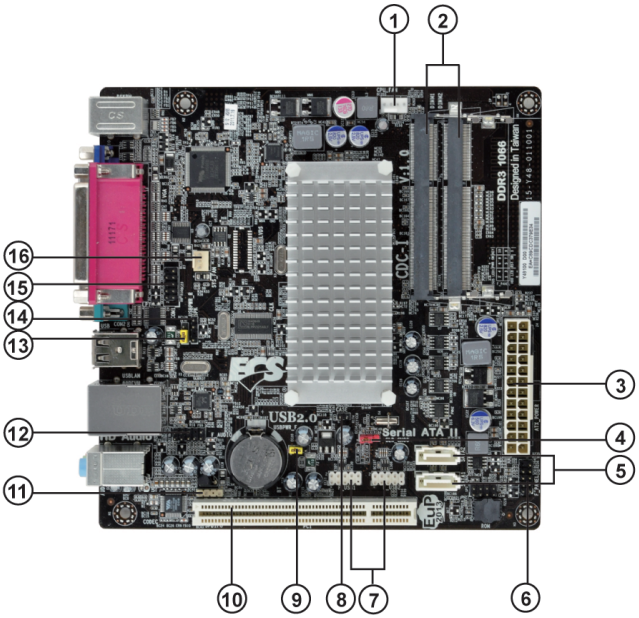


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU_FAN	CPU cooling fan connector
2. DIMM_1~2	204-pin DDR3 SDRAM slots
3. ATX_POWER	Standard 24-pin ATX power connector
4. CLR_CMOS	Clear CMOS jumper
5. SATA1~2	Serial ATA connectors
6. F_PANEL	Front panel switch/LED header
7. F_USB1~2	Front Panel USB headers
8. CASE	Chassis detect jumper
9. USBPWR_F	Front panel USB power select jumper
10. PCI	32-bit add-on card slots
11.SPDIFO	SPDIF out header
12. F_AUDIO	Front panel audio header
13. USBPWR_R	Rear USB/PS2 power select jumper
14. SPK	Speaker header
15. COM2	Onboard serial header
16. SYS_FAN	System cooling fan connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Memo

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the ITX system case. Some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

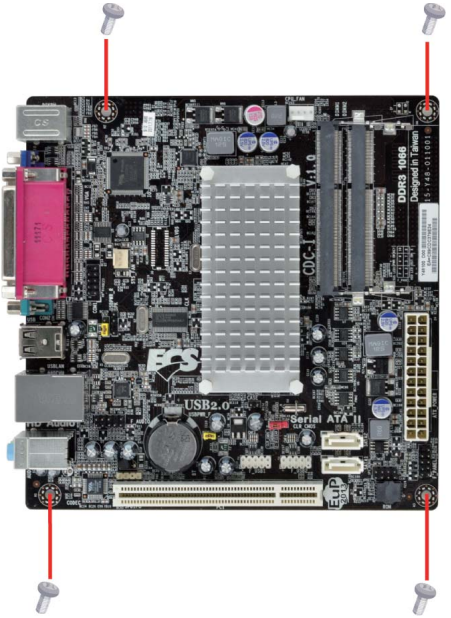
This motherboard carries an ITX form factor of 170 x 170 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

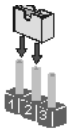
Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

SHORT

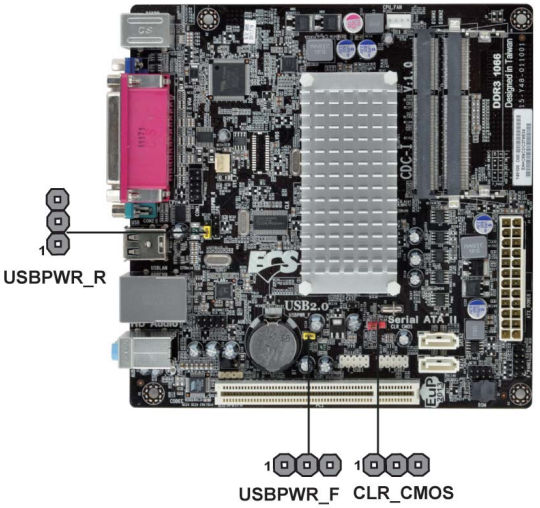
OPEN

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.



Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	Clear CMOS	1-2: NORMAL 2-3: CLEAR Before clearing the CMOS, make sure to turn off the system.	1 **CLR_CMOS**
USBPWR_F	3-pin	Front Panel USB Power	1-2: VCC 2-3: 5VSB	1 **USBPWR_F**
USBPWR_R	3-pin	Rear USB PS/2 Power Select	1-2: VCC 2-3: 5VSB	1 **USBPWR_R**

1. To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save and Exit Setup".

2. Make sure the power supply provides enough 5VSB voltage before selecting the 5VSB function.

Installing Hardware

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 204-pin DDR3 SODIMM. The total memory capacity is 4 GB.

DDR3 SDRAM memory module table

Memory module	Memory Bus
DDR3 1066	*533 MHz*

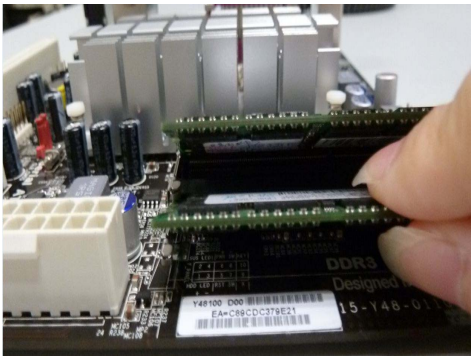
DDR3 SODIMM Modules (unbuffered, non-ECC)
Raw Card B=1 rank of x8 SDRAM (double sided)
Raw Card F=2 ranks of x8 SDRAM (double sided)

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1. This motherboard supports unbuffered DDR3 SODIMM.
2. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
3. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
4. Install the DIMM module into the slot and press it firmly down until it seats correctly.
5. Install any remaining DIMM modules.



* *For reference only*

The platform requires DDR3 SODIMMs to be populated starting with the SODIMM at the far end from the processor as indicated in Table below. Here, SODIMM2 is situated at the far end from the processor.

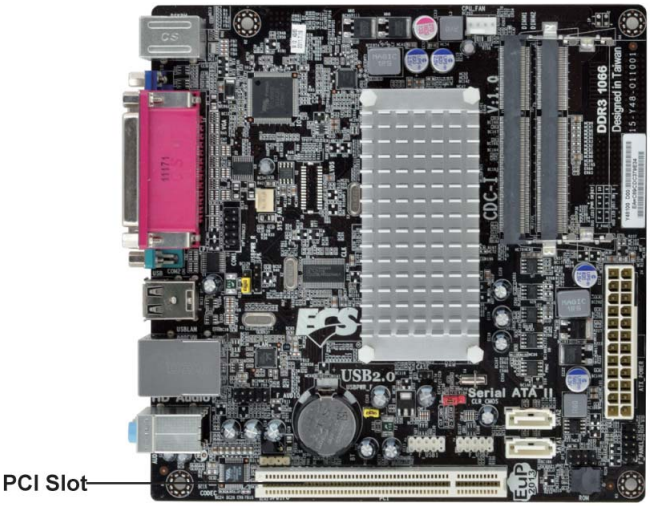
Table. Raw Card Support Matrix for 2 SODIMM Configuration.

SODIMM1	SODIMM2
Raw Card B	Raw Card B
Unpopulated	Raw Card B
Unpopulated	Raw Card F

Expansion Slots

Installing Add-on Cards

The slot on this motherboard is designed to hold expansion card and connect it to the system bus. Expansion slot is a mean of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.

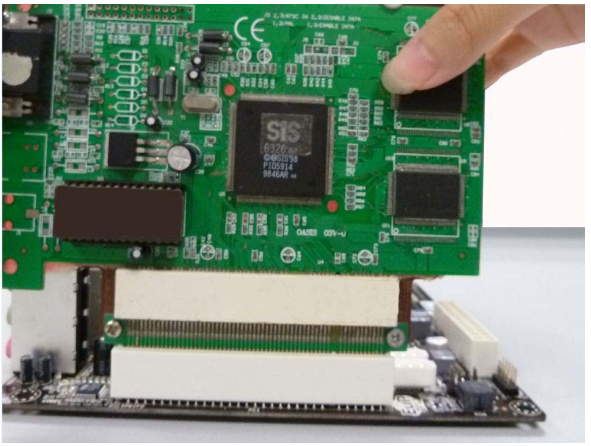


PCI Slot This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3 Secure the metal bracket of the card to the system case with a screw.



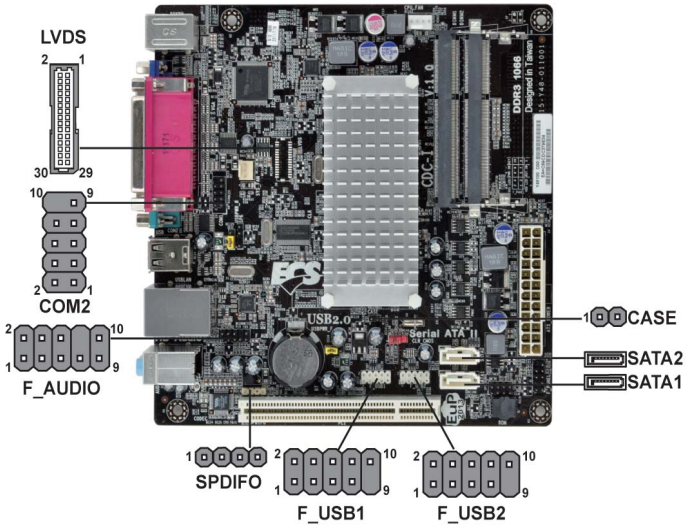
* *For reference only*

1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

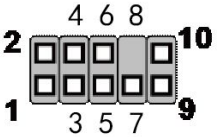
Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



F_AUDIO: Front Panel Audio Header

The front panel audio header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access. This header supports HD audio by default. If you want connect an AC' 97 front panel audio to HD onboard headers, please set as below picture.



For HD Front Audio

Pin	Description	Pin	Description
1	Front panel microphone input signal	2	Analog groud
3	Microphone power	4	Presence#
5	Right channel to front panel	6	Sensel_Return
7	Sense_Send	8	No pin
9	Left channel to front panel	10	Sense2_Return

For AC'97 HD Front Audio

Pin	Description	Pin	Description
1	Front panel microphone input signal	2	Analog ground
3	Microphone power	4	Analog power(+5V)
5	Right channel to front panel	6	Right channel return from front panel
7	RSVD	8	No pin
9	Left channel to front panel	10	Left channel return from front panel

AC' 97 Audio Configuration: To enable the front panel audio connector to support AC97 Audio mode.

If you use AC' 97 Front Panel, please don' t tick off " Using Front Jack Detect " . If you use HD Audio Front Panel, please tick off the option of " Using Front Jack Detect " .

For reference only

F_USB1~2: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	RSVD	Reserved

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

CASE: Chassis intrusion detect header

This detects if the chassis cover has been removed. This function needs a chassis equipped with instrusion detection switch and needs to be enabled in BIOS.

Pin1~2	Function
Short	Chassis cover is removed
Open	Chassis cover is closed

SATA1~2: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

COM2: Onboard serial port header

Connect a serial port extension bracket to this header to add a second serial port to your system.

Pin	Signal Name	Function
1	DCDB	Data Carrier Detect
2	SINB	Serial Input
3	SOUTB	UART B Serial Output
4	DTRB	UART B Data Terminal Ready
5	GND	Ground
6	DSRB	Data Set Ready
7	RTSB	RART B Request to Send
8	CTSB	Clear to Send
9	RI	Ring Indicator
10	Key	No pin

SPDIFO: SPDIF out header

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

LVDS: LVDS connector (Optional)

Pin	Signal Name	Pin	Signal Name
1	VDD	2	VDD
3	GND	4	GND
5	V_LED	6	V_LED
7	GND	8	GND
9	PWM_LED	10	EN_LED
11	GND	12	RXIN3-
13	RXIN3+	14	GND
15	V_EDID	16	GND
17	RXIN0-	18	RXIN0+
19	GND	20	RXIN1-
21	RXIN1+	22	GND
23	RXIN2-	24	RXIN2+
25	GND	26	RXCLK+
27	RXCLK-	28	GND
29	DATA-EDID	30	CLK-EDID

Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive

This section describes how to install SATA connector

About SATA Connectors

Your motherboard features two SATA connectors supporting a total of two drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

SATA power cable (optional)

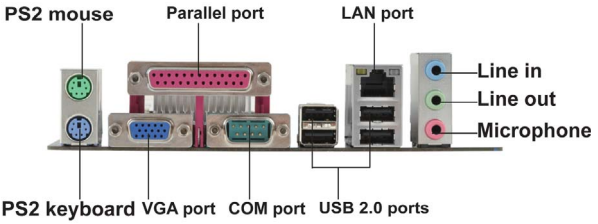
Refer to the illustration below for proper installation:

1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard does not support the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:

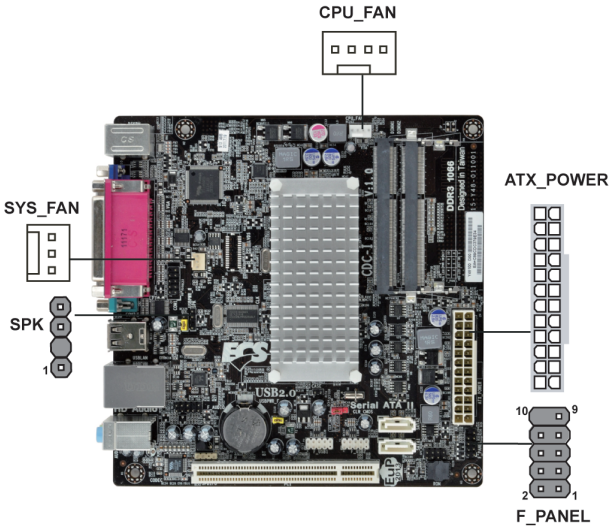


PS2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port	Use LPT to connect printers or other parallel communications devices.
COM Port	Use the COM port to connect serial devices such as mice or fax/modems.
VGA Port	Connect your monitor to the VGA port.
LAN Port	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone.

Connecting Case Components

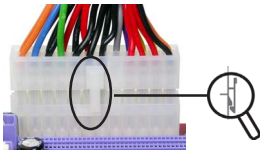
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1. Connect the CPU cooling fan cable to **CPU_FAN**.
2. Connect the standard power supply connector to **ATX_POWER**.
3. Connect the case switches and indicator LEDs to the **F_PANEL**.
4. Connect the system cooling fan connector to **SYS_FAN**.
5. Connect the case speaker cable to **SPK**.



Connecting 24-pin power cable

The ATX_POWER 24-pin connector allows you to connect to ATX v2.x power supply.



24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX_POWER match perfectly.

CPU_FAN: CPU Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN Control

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

ATX_POWER: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

SYS_FAN: System Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

SPK: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	NC
4	Signal

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or micro-ATX cases. Refer to the table below for information:

F_PANEL

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

** MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

Table 1: DDR3 (memory module) QVL(Qualified Vendor List)

The following DDR3 1333/1066 memory modules have been tested and qualified for use with this motherboard.

NO.	Vendor	Module part number	IC Brand	IC Chip Number	SS/DS	Size
1.2 DDR3 (SODIMM) 1333						
1	Hynix	HMT351S6BFR8C-H9	Hynix	H5TQ2G83AFR	DS	4GB
2	Hynix	HMT125U6BFR8C-H9 N0 AA-C	Hynix	H5TQ1G83BFRG7C	DS	2GB
3	Samsung	M471B5273CH0-CH9	SEC	K4B2G0846C	DS	4GB
4	KingMax	FSFF65F-C8KM9	KingMax	KFC8FNMXF-BXX-15E	DS	4GB
5	A-DATA	EL73I1B1672ZU	Elpida	J1108BFBG-DJ-F	DS	2GB
6	PSC	AS7F8G73D-DG1	PSC	A3P1GF3DGF	DS	1GB
7	Nanya	NT1GC64BH8A1PS-CG	Nanya	NT5CB64M16AP-CG	DS	1GB
8	PSC	AS8F8G73D-DG1	PSC	A3P1GF3DGF	DS	2GB
9	Nanya	NT2GC64B8HC0NS-CG	Nanya	NT5CB128M8CN-CG	DS	2GB
10	Apacer	AS04GFA33C9QBGC	Hynix	H5TQ2G83BFR	DS	4GB
11	Elpida	EBJ21UE8BDS0-DJ-F	Elpida	J1108BDSE-DJ-F	DS	2GB
12	Elpida	EBJ10UE8BDS0-DJ-F	Elpida	J1108BDSE-DJ-F	DS	1GB
13	Elpida	EBJ21UE8BFU0-DJ-F	Elpida	J1108BDSE-DJ-F	DS	2GB
14	Micron	MT4JSF12864HZ-1G4D1	Micron	OGD12 D9LGK	SS	1GB
15	Micron	MT8JSF25664HZ-1G4D1	Micron	OCD12 D9LGK	DS	2GB
16	Micron	MT16JSF51264HZ-1G4D1	Micron	OBD12 K9LGD	DS	4GB
1.1 DDR3 (SODIMM) 1066						
1	Hynix	HMT112S6AFR6C-G7N0AA	Hynix	H5TQ1G63AFR G7C 850A	DS	1GB
2	Hynix	HMT125S6BFR8C-G7	Hynix	H5TQ1G83BFR	DS	2GB
3	Samsung	M471B5673DZ1-CF8	Samsung	K4B1G1646D-HCF8	DS	1GB
4	Samsung	M471B5673DZ1-CF8	Samsung	K4B1G0846D	DS	2GB
5	Micron	MT8JSF12864HZ-1G1D1	Micron	8GD22 D9JNL	DS	1GB
6	Kingston	KVR1066D3S7	Elpida	J1108BABG-DJ-E	DS	2GB
7	Kingston	KVR1066D3S7	Samsung	K4B2G0846B-HCF8	DS	4GB
8	Nanya	NT1GC64BH8A1PS-BE	Nanya	NT5CB64M16AP-BE	DS	1GB
9	Nanya	NT2GC64B8HC0NS-BE1	Nanya	NT5CB128M8CN-BE	DS	2GB
10	G.SKILL	F3-8500CL7S-2GBSQ			DS	2GB

Table 2: PCI QVL (Qualified Vendor List)

The following PCI card has been tested and qualified for use with this motherboard.

PCI					
1	PCI card	Modem	ANATEL	ANATEL 3652B-RD01D850	Pass
2	PCI card	Modem	Conexant	Conexant RD01-D850 CX11256-11	Pass
3	PCI card	Audio Card	Creative	SB0350	Pass
4	PCI card	Audio Card	ASUS	ASUS Audio card Xonar D2	Pass
5	PCI card	LAN Card	Intel	Intel Pro/1000 GT	Pass
6	PCI card	LAN Card	RealTek	RealTek RTL-8110SC	Pass
7	PCI card	HDD Recover Card	Sanming	sanmingwangluguanlika	Pass
8	PCI card	Modem Card	SpeedGam+	HP156M3/PCI Slot	Pass
9	PCI card	LAN Card	D-LINK	D-LINK Airplus DWL-G520+A	Pass
10	PCI card	SCSI Card	Adaptec	ASC-39160	Pass

PCI cards and 4GB memory modules had been verified, but they are not supported by specifications of Intel Cedar Trail platform.

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press the delete key to access BIOS Setup Utility.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.

American Megatrends
CDC-I Release 07/20/2011
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.
Press <F7> to enter BBS POPUP
Press <DEL> or <F2> to enter setup.
CMOS Settings Wrong

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a icon ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a icon ▶.

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-	Change Opt.
Enter	Select
F1	General Help
F2	Previous Value
F3	Optimized Defaults
F4	Save & Exit

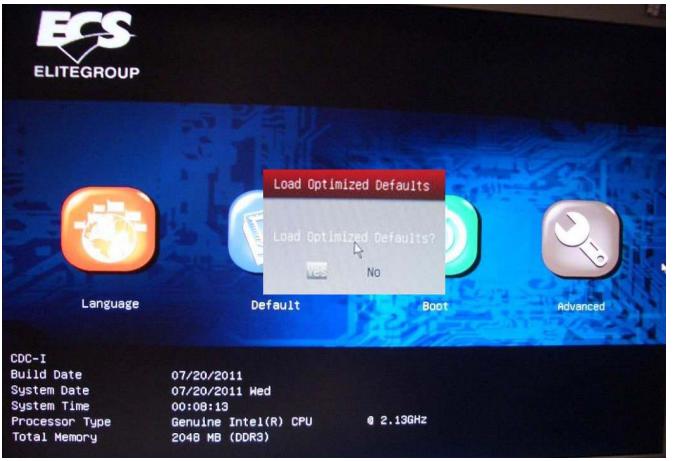
1. For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.
2. In this Gui BIOS, you can operate by mouse or keyboard. Click : select item; Double click: enter; Right click: exit.

Language

Select the language icon and press <Enter> or double click the left key of the mouse to display the following screen. Then you can choose the language which displays in the following screen.

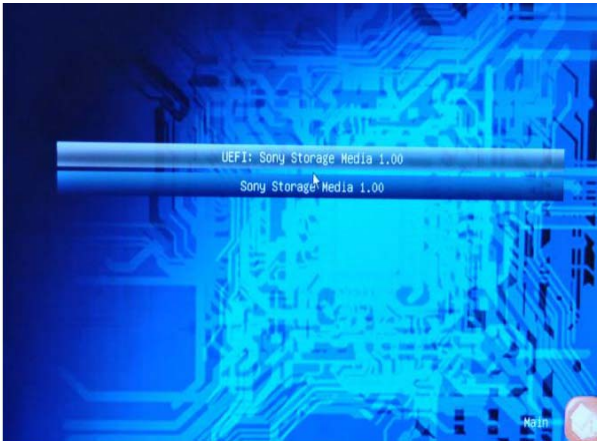
Default

Select the default icon and press <Enter> or double click the left key of the mouse to display the following screen. Then you can load optimized defaults or not.



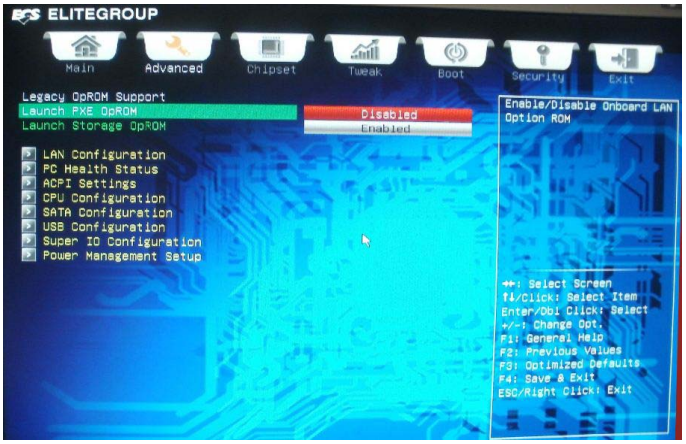
Boot

Select the boot icon and press <Enter> or double click the left key of the mouse to display the following screen. Then you can choose the boot device.



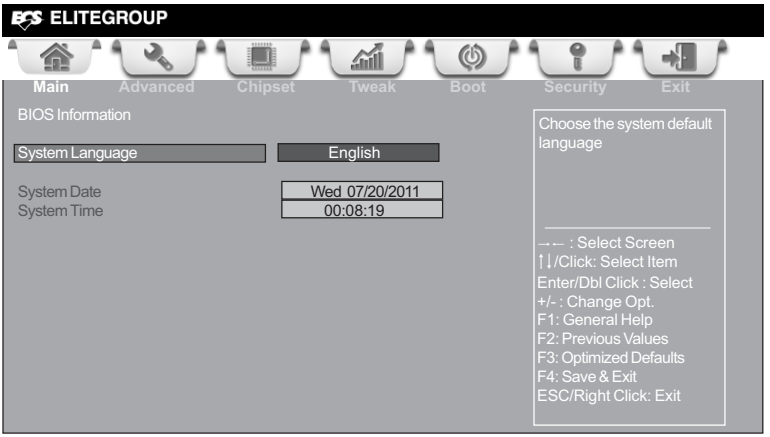
Advanced

Select the advanced icon and press <Enter> or double click the left key of the mouse to display the following screen.



Main Menu

This menu shows the information of BIOS and enables you to set the system language, date and time.



System Language (English)

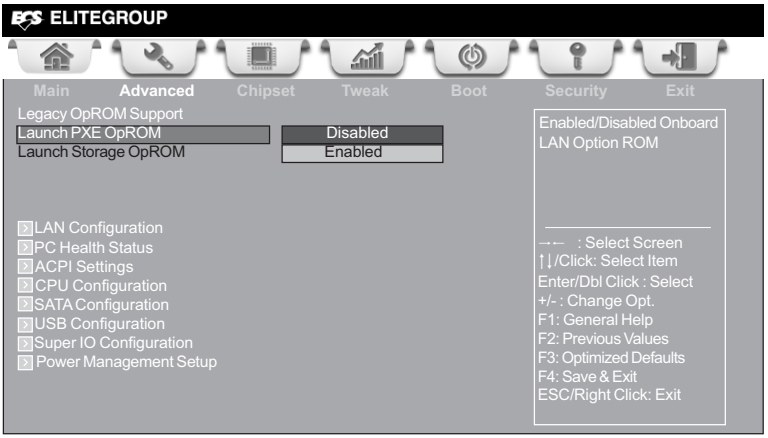
This item is used to set system language.

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system.



Launch PXE OpROM (Disabled)

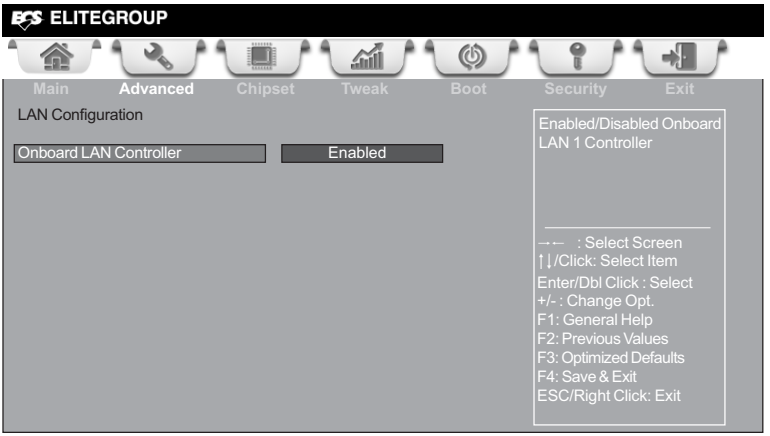
The item enables or disables launch PXE Option ROM.

Launch Storage OpROM (Enabled)

Use this item to enable or disable the Storage OpROM.

LAN Configuration

The item in the menu shows the LAN-related information that the BIOS automatically detects.



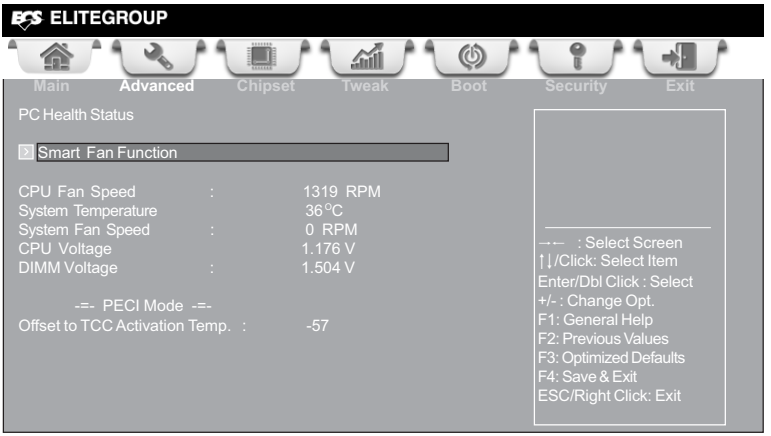
Onboard LAN Controller (Enabled)

Use this item to enable or disable the Onboard LAN.

Press <Esc> to return to the Advanced Menu page.

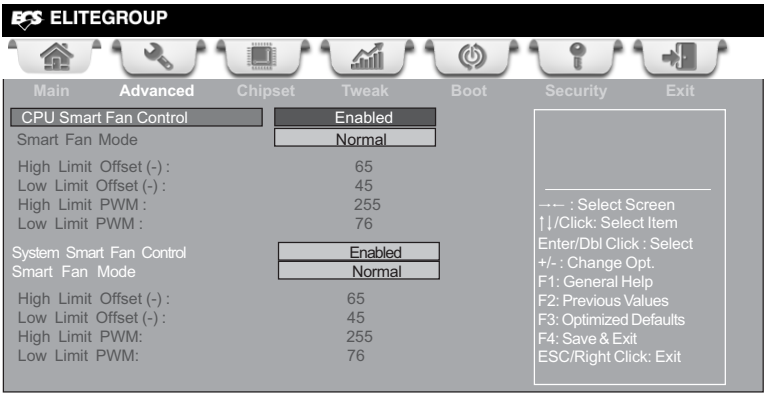
PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.



▶Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:



CPU Smart Fan Control (Enabled)

This item allows you to enable/disable the control of the CPU fan speed by changing the fan voltage.

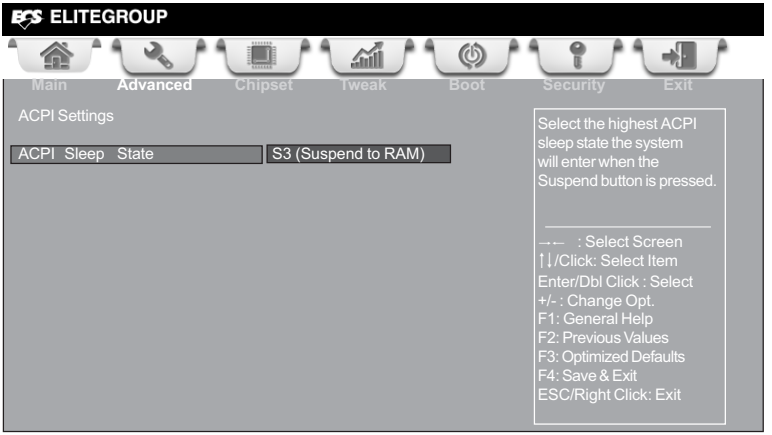
Smart Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quiet mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.

Press <Esc> to return to the Advanced Menu page.

ACPI Configuration

The item in the menu shows the highest ACPI sleep state when the system enters suspend.



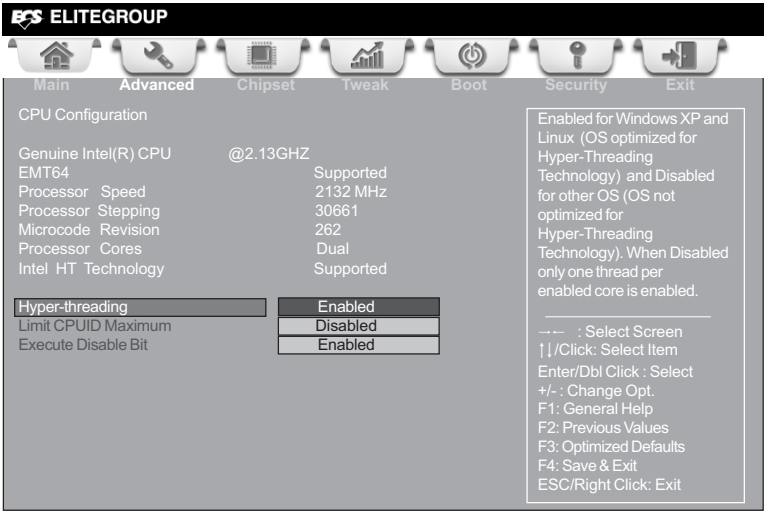
ACPI Sleep State [S3 (Suspend to RAM)]

This item allows user to enter the ACPI S3 (Suspend to RAM) Sleep State (default).

Press <Esc> to return to the Advanced Menu page.

CPU Configuration

The item in the menu shows the CPU.



Genuine Intel(R) CPU (@2.13GHz)

This is display-only field and diaplays the information of the CPU installed in your computer.

EMT64 (Supported)

This item shows the computer supports EMT64.

Processor Speed (2132 MHz)

This item shows the current processor speed.

Processor Stepping (30661)

This item shows the processor stepping version.

Microcode Revision (262)

This item shows the Microcode version.

Processor Cores (Dual)

This item shows the core number of the processor.

Intel HT Technology (Supported)

This item shows that your computer supports Intel HT technology or not.

Hyper-threading (Enabled)

This item is only available when the chipset supports Hyper-threading and you areusing a Hyper-threading CPU.

Limit CPUID Maximum (Disabled)

Use this item to enable or disable the maximum CPUID value limit. When supports Prescott and LGA775 CPUs, enables this to prevent the system from “rebooting” when trying to install Windows NT 4.0.

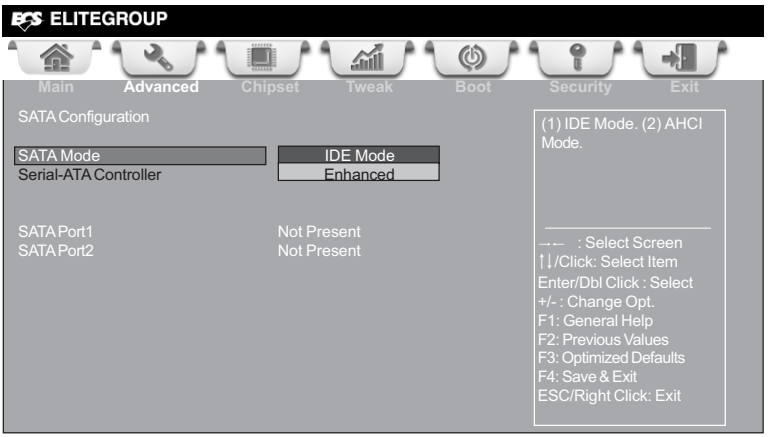
Execute Disable Bit (Enabled)

This item allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage or worm propagation. Replacing older computers with Execute Disable Bit enabled systems can halt worm attacks, reducing the need for virus related repair.

Press <Esc> to return to the Advanced Menu page.

SATA Configuration

Use this item to show the mode of serial SATA configuration options.



SATA Mode (IDE Mode)

Use this item to select SATA mode.

Serial-ATA Controller (Enhanced)

Use this item to select the Serial-ATA controller options: Disabled, Enhanced.

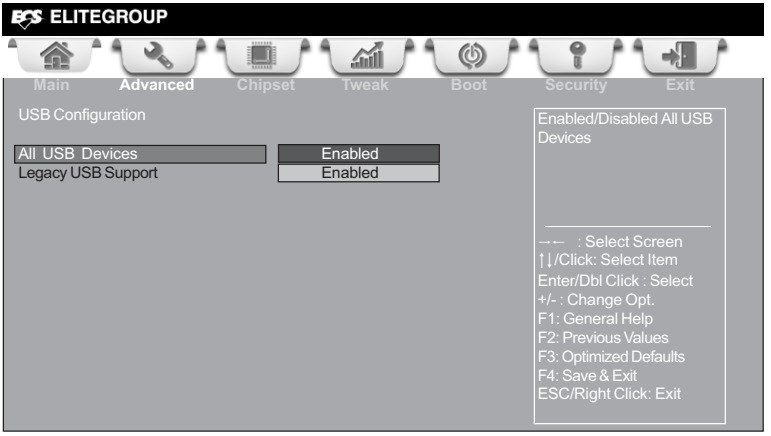
SATA Port1~2 (Not Present)

This motherboard supports two SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.

Press <Esc> to return to the Advanced Menu page.

USB Configuration

Use this item to show the information of USB configuration.



All USB Devices (Enabled)

Use this item to enable or disable all USB devices.

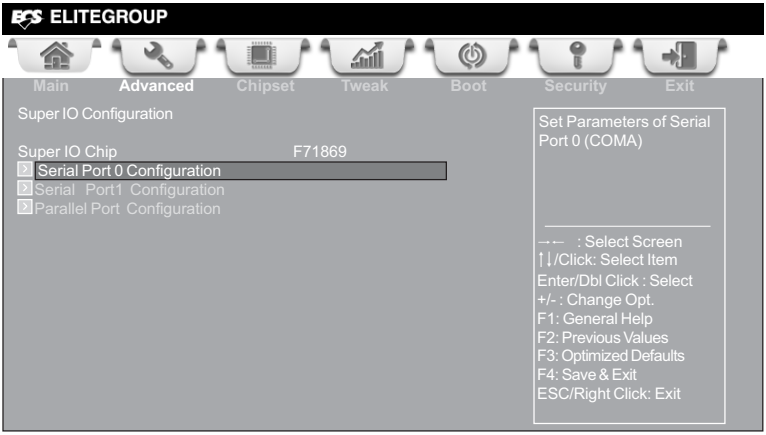
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices. Setting to Audio allows the system to detect the presence of the USB device at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

Press <Esc> to return to the Advanced Menu page.

Super IO Configuration

Use this item to show the information of Super IO configuration.

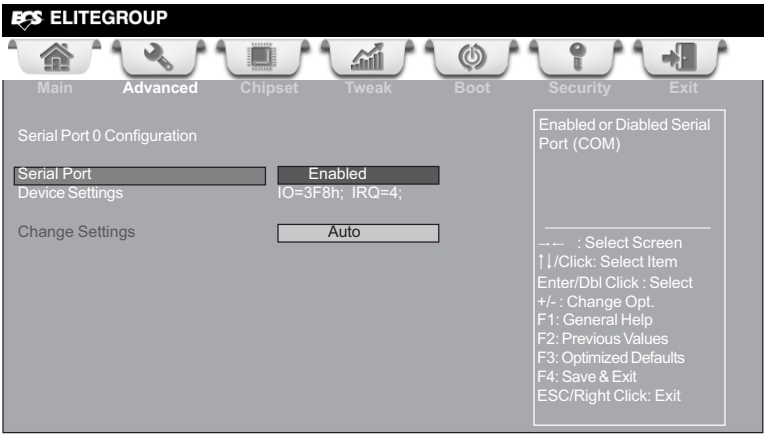


Serial IO Chip (F71869)

This item shows the information of the super IO chip.

►Serial Port 0 Configuration

Scroll to this item and press <Enter> to view the following screen:



Serial Port (Enabled)

This item allows you to enable or disable serial port.

Device Settings (IO=3F8h; IRQ=4)

This item shows the information of the device settings.

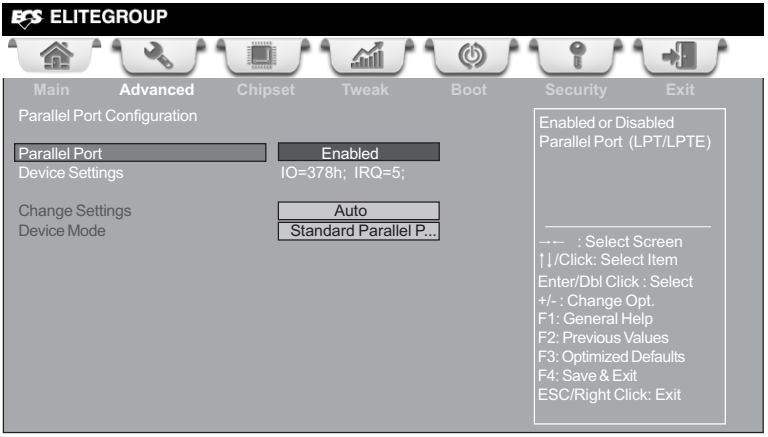
Change Settings (Auto)

Use this item to change device settings.

Press <Esc> to return to the Super IO Configuration page.

▶Parallel Port Configuration

Scroll to this item and press <Enter> to view the following screen:



Parallel Port (Enabled)

This item allows you to enable or disable parallel port.

Device Settings (IO=378h; IRQ=5;)

This item shows the information of the device settings.

Change Settings (Auto)

Use this item to change device settings.

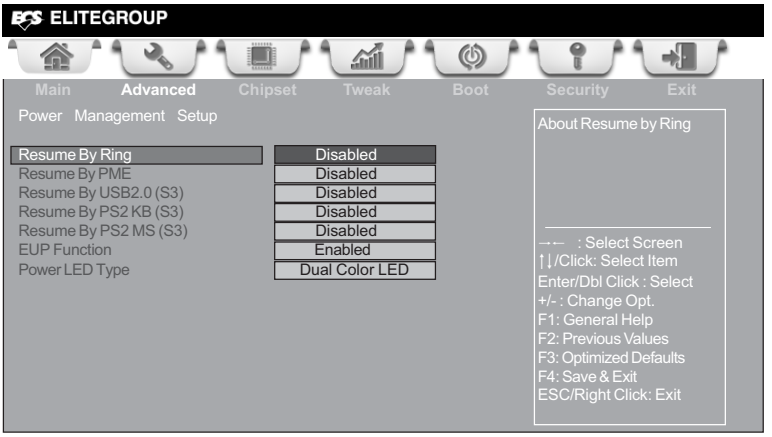
Device Mode (Standard Parallel P...)

This item shows the information of the device mode.

Press <Esc> to return to the Advanced Menu page.

Power Management Setup

This page sets up some parameters for system power management operation.



Resume By RING (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume By PME (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Resume By USB2.0 (S3) (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3 mode.

Resume By PS2 KB (S3) (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

EUP Support (Enabled)

This item allows user to enable or disable EUP support.

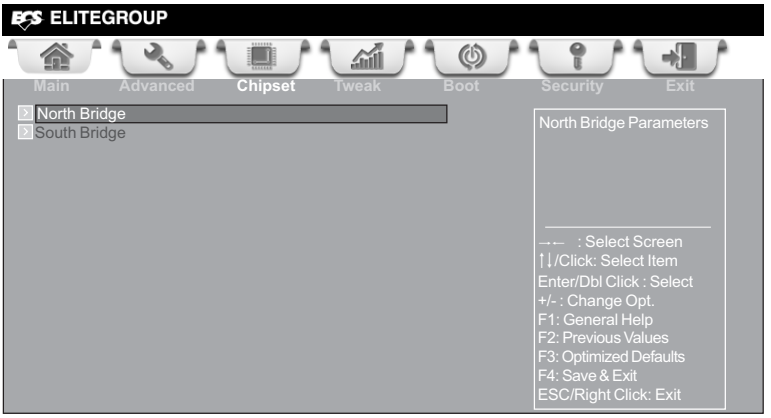
Power LED Type (Dual Color LED)

This item shows the type of the Power LED.

Press <Esc> to Enter the Chipset Menu page.

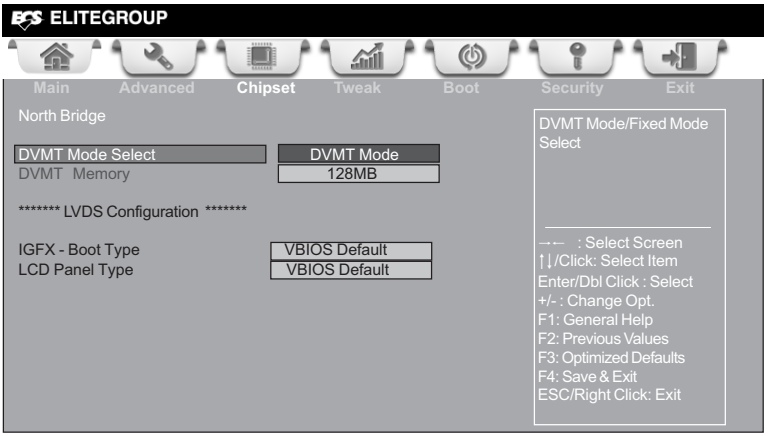
Chipset Menu

The chipset menu items allow you to change the settings for the North chipset, South chipset and other system.



►North Bridge

Scroll to this item and press <Enter> and view the following screen:



DVMT Mode Select (DVMT Mode)

This item allows you to select the DVMT operating mode.

DVMT Memory (128MB)

This item allows you to set the DVMT Memory size.

IGFX - Boot Type (VBIOS Default)

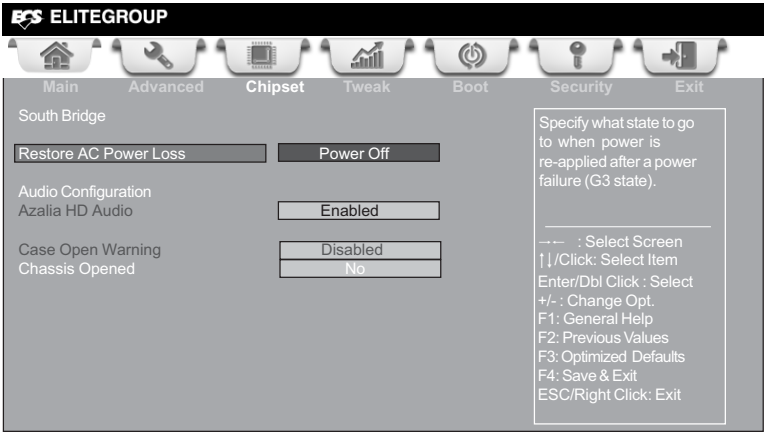
Use this item to select the video device you want to use during POST. It will not be effective if the selected device is not installed.

LCD Panel Type (VBIOS Default)

Use this item to select the resolution of LCD panel used by Internal Graphics Device.

▶South Bridge

Scroll to this item and press <Enter> to view the following screen.



Restore AC Power Loss (Power Off)

This item specifies what state to go to when power is re-applied after a power failure (G3 state).

Azalia HD Audio (Enabled)

This item enables or disables Azalia HD audio.

Case Open Warning (Disabled)

This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

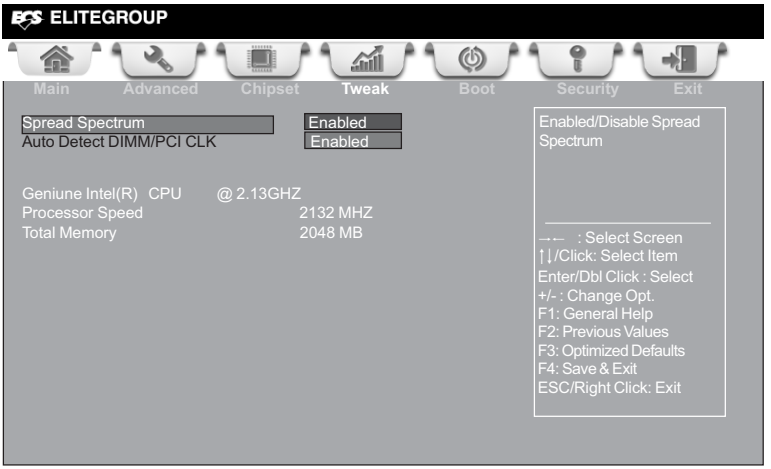
Chassis Opened (No)

This item indicates whether the case has been opened.

Press <Esc> to Enter the Tweak Menu page.

Tweak Menu

This page enables you to monitor or set some information of the processor you have installed in your system.



Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

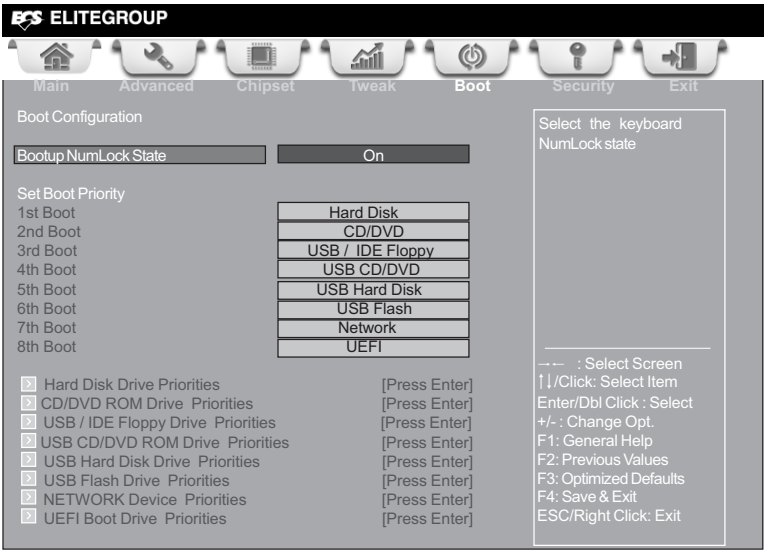
Auto Detect DIMM/PCI CLK (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Press <Esc> to Enter the Boot Menu page.

Boot Menu

This page enables you to set the keyboard NumLock state.



Bootup NumLock State (On)

This item enables you to select NumLock state.

1st/2nd/3rd/4th/5th/6th/7th/8th Boot

These items set the system boot order.

Hard Diks Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing hard disk drives.

CD/DVD ROM Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing CD/DVD ROM drives.

USB/IDE Floppy Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB floppy/floppy drives.

USB CD/DVD ROM Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB CD/DVD ROM drives.

USB HardDisk Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB hard disk drives.

USB Flash Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing USB Flash drives.

NETWORK Device Priorities

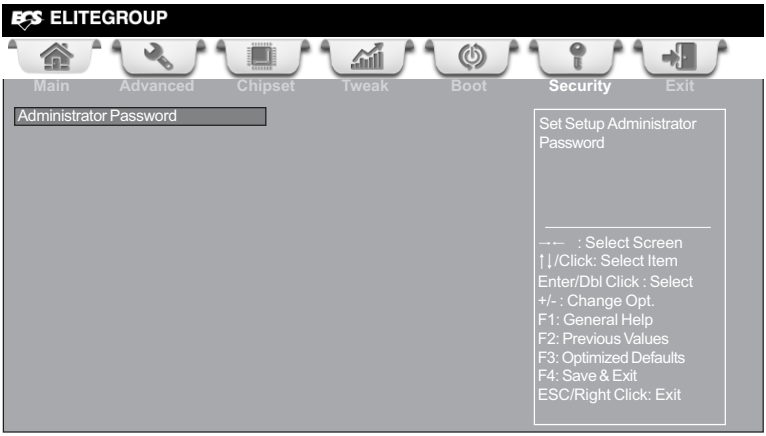
This item enables you to specify the sequence of loading the operating system from the installing network devices.

UEFI Boot Drive Priorities

This item enables you to specify the sequence of loading the operating system from the installing UEFI Boot drives.

Security Menu

This page enables you to set setup administrator password and user password.

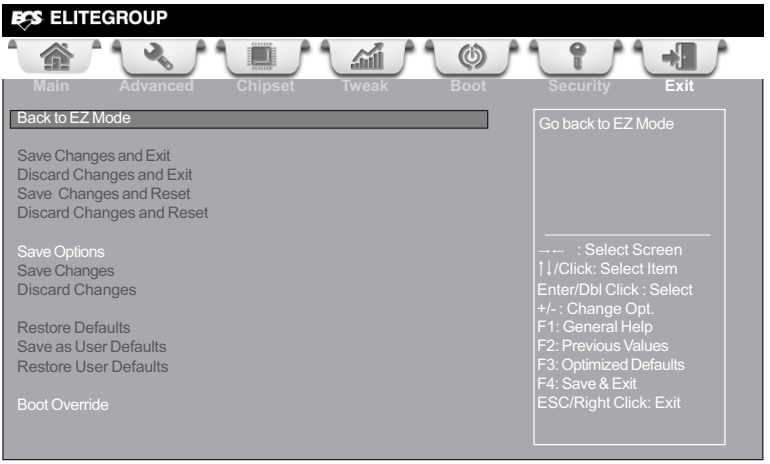


Administrator Password

Press <Enter> to setup administrator password.

Save & Exit Menu

This page enables you to exit system setup after saving or without saving the changes.



Back to EZ Mode

This item enables you to back to EZ mode.

Save Changes and Exit

This item enables you to exit system setup after saving the changes.

Discard Changes and Exit

This item enables you to exit system setup without saving any changes.

Save Changes and Reset

This item enables you to reset the system setup after saving the changes.

Discard Changes and Reset

This item enables you to reset system setup without saving any changes.

Save Options

This item enables you to save the options that you have made.

Save Changes

This item enables you to save the changes that you have made.

Discard Changes

This item enables you to discard any changes that you have made.

Restore Defaults

This item enables you to restore the system defaults.

Save as User Defaults

This item enables you to save the changes that you have made as user defaults.

Restore User Defaults

This item enables you to restore user defaults to all the setup options.

Boot Override

Use this item to select the boot device.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Website. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4
Using the Motherboard Software

About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.

1. *Never try to install all software from folder that is not specified for use with your motherboard.*
2. *The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver disk. Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.*

Auto-installing under Windows Vista/7

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disc loads automatically under Windows Vista/7. When you insert the DVD-ROM/CD-ROM disk in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.

If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Drivers Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk. Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows Vista/7. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **Exit** button closes the Auto Setup window.

Utilities Tab

Lists the software utilities that are available on the disk.

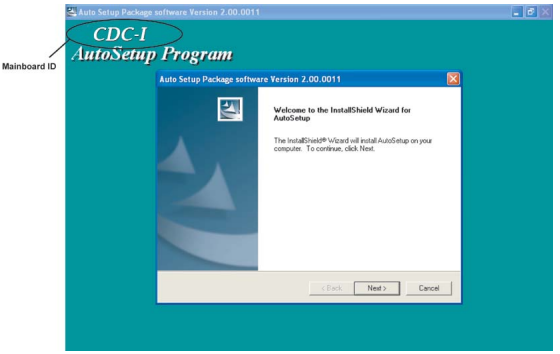
Information Tab

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

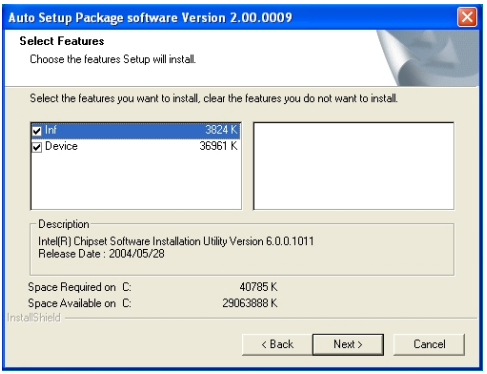
1. *Click **Setup.** The installation program begins:*


Auto Setup Package software Version 2.00.0011
CDC-I
AutoSetup Program
Mainboard ID
Auto Setup Package software Version 2.00.0011
Welcome to the InstallShield Wizard for AutoSetup
The InstallShield® Wizard will install AutoSetup on your computer. To continue, click Next.
< Back
Next >
Cancel

The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

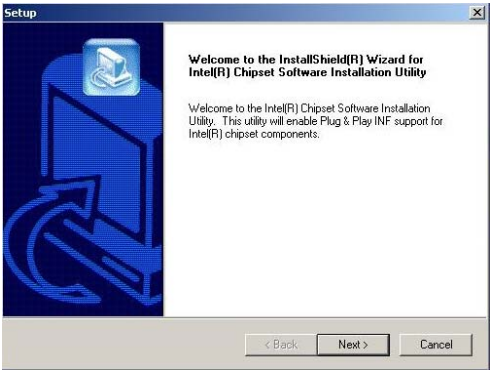
The motherboard identification is located in the upper left-hand corner.

2. *Click **Next.** The following screen appears:*


Auto Setup Package software Version 2.00.0009
Select Features
Choose the features Setup will install.
Select the features you want to install, clear the features you do not want to install.
Inf 3824 K
Device 36961 K
Description
Intel(R) Chipset Software Installation Utility Version 6.0.0.1011
Release Date : 2004/05/28
Space Required on C: 40785 K
Space Available on C: 29063888 K
InstallShield
< Back
Next >
Cancel

3. *Check the box next to the items you want to install. The default options are recommended.*

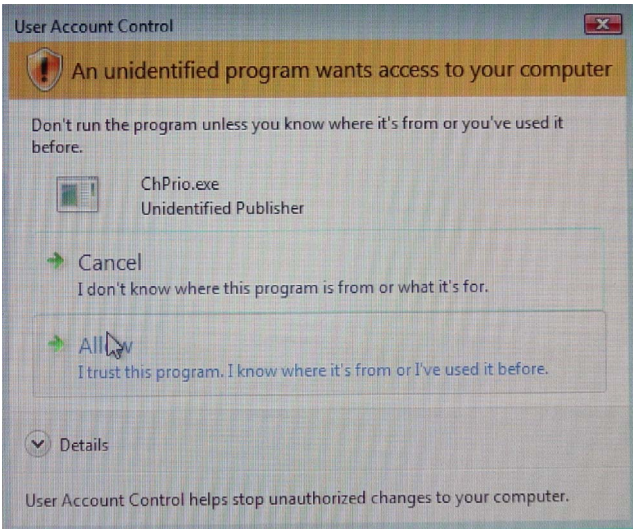
4. *Click **Next** run the Installation Wizard. An item installation screen appears:*


Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

5. *Follow the instructions on the screen to install the items.*

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Windows Vista/7 will appear below UAC (User Account Control) message after the system restart. You must select "Allow" to install the next driver. Continue this process to complete the drivers installation.


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
ChPrio.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

This concludes Chapter 4.

Chapter 5
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1.Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.
2. Check the VGA adapter card (if applicable) is inserted properly.
3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps: memory not detected
   b. 1 long beep and 8 short beeps: VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.
2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

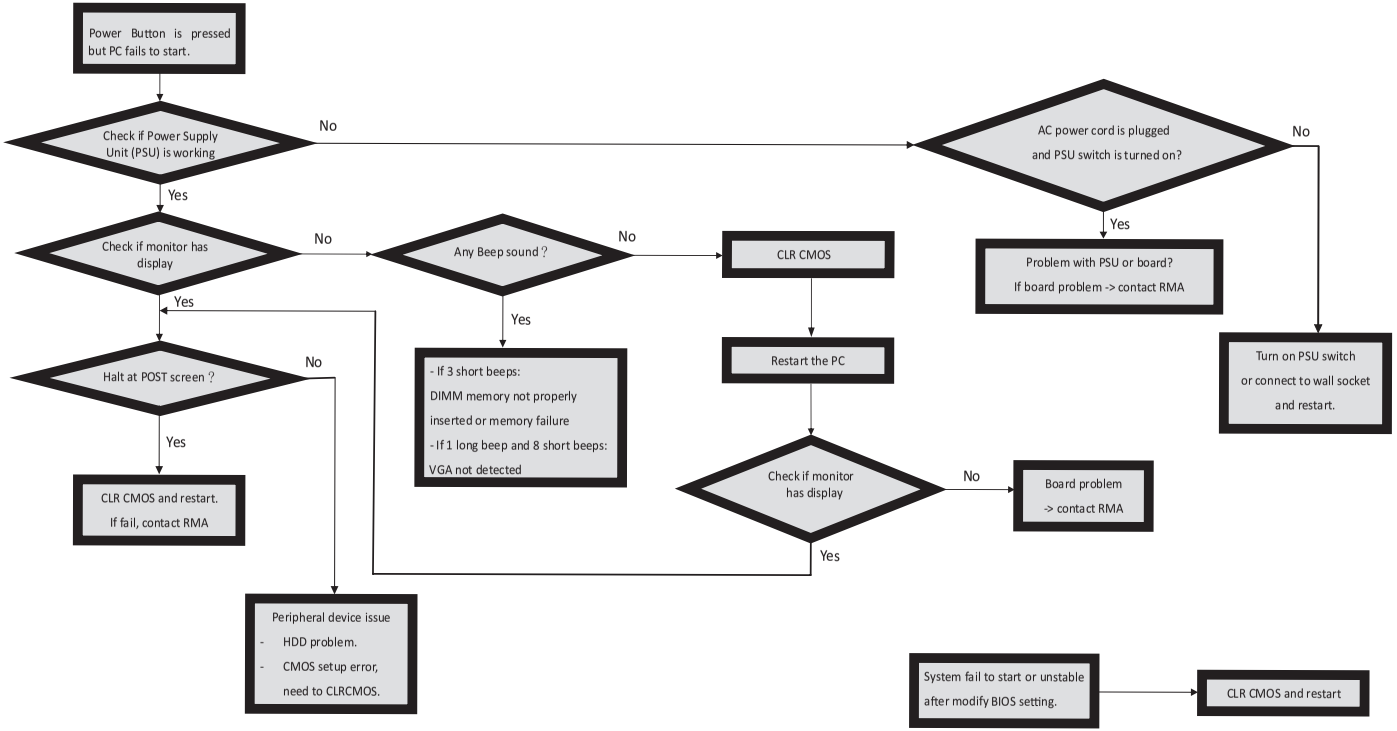
4. Remove the hard drive, optical drive or DDR memory to determine which of these components may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.
2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.
3. Routinely clean the CPU cooler fan to remove dust and hair.
4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.
5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its lifespan.
6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Yes
Check if monitor has display
No
Any Beep sound ?
No
CLR CMOS
Restart the PC
Yes
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
Halt at POST screen ?
No
Yes
CLR CMOS and restart. If fail, contact RMA
Check if monitor has display
No
Board problem -> contact RMA
Yes
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo